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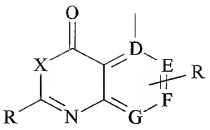

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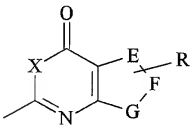

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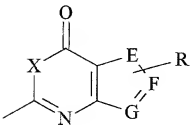

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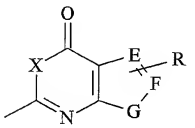

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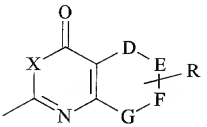

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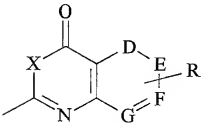

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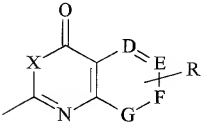
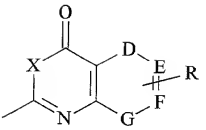




x) and mixtures thereof;

wherein each R is independently:

a) hydrogen;

b) C_1-C_{18} substituted or unsubstituted, linear or branched alkyl;

c) C_3-C_{18} substituted or unsubstituted, linear or branched cycloalkyl

d) C_2-C_{18} substituted or unsubstituted, linear or branched alkenyl;

e) C_2-C_{18} substituted or unsubstituted, linear or branched alkynyl;

f) C_6-C_{18} substituted or unsubstituted aryl;

g) C_2-C_{18} substituted or unsubstituted heterocyclic alkyl;

h) C_3-C_{18} substituted or unsubstituted heterocyclic alkenyl;

i) alkylenearyl having the formula:

$$-(R^1)_n-R^2$$

wherein R^1 is C_1-C_{12} linear or branched alkylene, C_2-C_{12} linear or branched alkenylene, or mixtures thereof; R^2 C_6-C_{18} substituted or unsubstituted aryl, or mixtures thereof; n is from 1 to 16;

j) an amino unit having the formula:

$$-(CH_2)_mN(R^3)_2$$

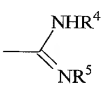
wherein each R^3 is independently C_1-C_{18} substituted or unsubstituted, linear or branched alkyl; m is from 0 to 10;

k) a quaternary ammonium unit having the formula:

$$-(CH_2)_m\overset{+}{N}(R^3)_3\ Y^-$$

wherein each R^3 is independently C_1-C_{18} substituted or unsubstituted, linear or branched alkyl; Y is an anion of sufficient charge to provide electronic neutrality; m is from 0 to 10;

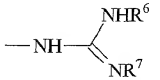
l) a unit having the formula:



wherein R^4 is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^5 is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^4 and R^5 can be taken

together to form a heterocyclic ring comprising from 3 to 5 carbon atoms;

m) a unit having the formula:



wherein R^6 is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^7 is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^6 and R^7 can be taken together to form a heterocyclic ring comprising from 3 to 5 carbon atoms;

n) a unit having the formula:

wherein R^8 is:

i) $-(CH_2)_p-$, wherein p is from 0 to 12;

ii) -C(O)-;

iii) $-C(X)NR^{10}-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

iv) $-C(X)R^{11}C(X)-$, wherein R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

v) $-C(X)NR^{10}C(X)-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

vi) $-C(X)NR^{10}R^{11}NR^{10}C(X)-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

vii) $-NR^{10}C(X)-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

viii) $-NR^{10}C(X)NR^{10}-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

ix) $-NR^{10}C(X)R^{11}NR^{10}-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

x) $-NR^{10}R^{11}C(X)NR^{10}-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

xi) $-NR^{10}C(X)R^{11}C(X)O-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

xii) $-OC(X)R^{11}C(X)NR^{10}-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

xiii) $-NR^{10}C(X)NR^{10}R^{11}-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

xiv) $-R^{11}NR^{10}C(X)NR^{10}-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; wherein X is oxygen, sulfur, NR^{10}, and mixtures thereof;

xv) $-R^{11}NR^{10}C(X)NR^{10}R^{11}-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

xvi) $-NR^{10}-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof;

xvii) -O-;

xviii) $-(R^{11})_tC(X)(R^{11})_t-$; wherein R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; t is 0 or 1; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

xix) $-(R^{11})_tOC(O)(R^{11})_t-$; wherein R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; t is 0 or 1;

xx) $-(R^{11})_tC(O)O(R^{11})_t-$; wherein R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; t is 0 or 1;

xxi) alkyleneoxyalkylene having the formula:

$$—(R^{12}O)_qR^{13}—$$

wherein R^{12} is C_2-C_6 linear or branched alkylene, substituted or unsubstituted phenylene; R^{13} is $-(CH_2)_p-$, wherein p is from 0 to 12; q is from 1 to 4;

xxii) -S-;

xxiii) $-(R^{11})_tS(R^{11})_t-$; wherein R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; t is 0 or 1;

xxiv) $-(R^{11})_tS(O)(R^{11})_t-$; wherein R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; t is 0 or 1;

xxv) $-(R^{11})_tSO_2(R^{11})_t-$; wherein R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; t is 0 or 1;

xxvi) or mixtures thereof;

R^9 is:

i) hydrogen;

ii) C_1-C_{18} substituted or unsubstituted, linear or branched alkyl;

iii) C_3-C_{18} substituted or unsubstituted, linear or branched cycloalkyl

iv) C_2-C_{18} substituted or unsubstituted, linear or branched alkenyl;

v) C_2-C_{18} substituted or unsubstituted, linear or branched alkynyl;

vi) C_6-C_{18} substituted or unsubstituted aryl;

vii) C_2-C_{18} substituted or unsubstituted heterocyclic alkyl;

viii) C_3-C_{18} substituted or unsubstituted heterocyclic alkenyl;

ix) -OH;

x) $-SO_3M$;

xi) $-OSO_3M$;

xii) $-NO_2$;

xiii) halogen selected from fluorine, chlorine, bromine, iodine, or mixtures thereof;

xiv) $-C(Hal)_3$, wherein each Hal is fluorine, chlorine, bromine, iodine, or mixtures thereof;

xv) $-COR^{14}$; wherein R^{14} is hydrogen, -OH, C_1-C_{12} alkyl, C_1-C_{12} alkoxy, or mixtures thereof; $-N(R^{15})_2$, or mixtures thereof; each R^{15} is independently hydrogen, -OH, C_1-C_4 alkyl, or mixtures thereof;

xvi) $-CH(OR^{14})_2$ wherein R^{14} is hydrogen, C_1-C_{12} alkyl, or two R^{14} units can be taken together to form a ring having from 3 to 5 carbon atoms; or mixtures thereof;

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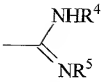
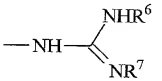
xvii) a unit having the formula:



wherein R^4 is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^5 is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^4 and R^5 can be taken together to form a heterocyclic ring comprising from 3 to 5 carbon atoms;

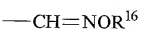
xviii) a unit having the formula:



wherein R^6 is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^7 is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^6 and R^7 can be taken together to form a heterocyclic ring comprising from 3 to 5 carbon atoms;

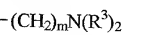
xix) -$NHOR^{16}$, wherein R^{16} is hydrogen; C_1-C_{12} linear or branched alkyl; acyl having the formula -COR^{17}, wherein R^{17} is C_1-C_4 alkyl; or mixtures thereof;

xx) a unit having the formula:



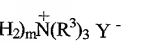
wherein R^{16} is hydrogen; C_1-C_{12} linear or branched alkyl; C_7-C_{22} linear or branched alkylenearyl; acyl having the formula -COR^{17}, R^{17} is C_1-C_4 alkyl; or mixtures thereof;

xxi) an amino unit having the formula:



wherein each R^3 is independently C_1-C_{18} substituted or unsubstituted, linear or branched alkyl; m is from 0 to 10;

xxii) a quaternary ammonium unit having the formula:



wherein each R^3 is independently C_1-C_{18} substituted or unsubstituted, linear or branched alkyl; Y is an anion of sufficient charge to provide electronic neutrality; m is from 0 to 10;

o) two R units on the same carbon atom can be taken together to form a carbonyl unit or carbonyl unit equivalent; and

p) mixtures thereof;

D, E, F, and G are each independently selected from the group consisting of CH, CH_2, N, NH, O, S, CF_2, and mixtures thereof;

L is selected from the group consisting of:

i) $-(CH_2)_p-$, wherein p is from 0 to 12;

ii) -C(O)-;

iii) $-C(X)NR^{10}-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

iv) $-C(X)R^{11}C(X)-$, wherein R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

v) $-C(X)NR^{10}C(X)-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

vi) $-C(X)NR^{10}R^{11}NR^{10}C(X)-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

vii) $-NR^{10}C(X)-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

viii) $-NR^{10}C(X)NR^{10}-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

ix) $-NR^{10}C(X)R^{11}NR^{10}-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

x) $-NR^{10}R^{11}C(X)NR^{10}-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

xi) $-NR^{10}C(X)R^{11}C(X)O-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

xii) $-OC(X)R^{11}C(X)NR^{10}-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted

phenylene, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

xiii) $-NR^{10}C(X)NR^{10}R^{11}-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

xiv) $-R^{11}NR^{10}C(X)NR^{10}-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

xv) $-R^{11}NR^{10}C(X)NR^{10}R^{11}-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

xvi) $-NR^{10}-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof;

xvii) -O-;

xviii) $-(R^{11})_tC(X)(R^{11})_t-$; wherein R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; t is 0 or 1; wherein X is oxygen, sulfur, NR^{10}, and mixtures thereof;

xix) $-(R^{11})_tOC(O)(R^{11})_t-$; wherein R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; t is 0 or 1;

xx) $-(R^{11})_tC(O)O(R^{11})_t-$; wherein R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; t is 0 or 1;

xxi) $-(R^{11})_tOC(O)O(R^{11})_t-$; wherein t is 0 or 1;

xxii) alkyleneoxyalkylene having the formula:

$$—(R^{12}O)_qR^{13}—$$

wherein R^{12} is C_2-C_6 linear or branched alkylene, substituted or unsubstituted phenylene; R^{13} is $-(CH_2)_p-$, wherein p is from 0 to 12; q is 1 or 2;

xxiii) -S-;

xxiv) $-(R^{11})_tS(R^{11})_t-$; wherein R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; t is 0 or 1;

xxv) $-(R^{11})_tS(O)(R^{11})_t-$; wherein R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; t is 0 or 1;

xxvi) $-(R^{11})_tSO_2(R^{11})_t-$; wherein R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; t is 0 or 1;

xxvii) or mixtures thereof; and

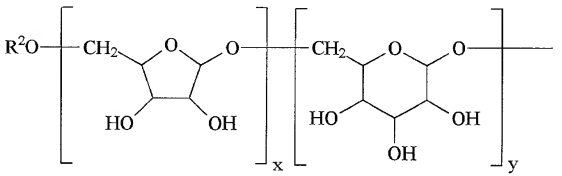
[Poly] units are selected from:

i) a unit having the formula:

$$R^{19}(OR^{18})_x-$$

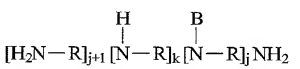
wherein R^{18} is C_2-C_{12} linear alkylene, C_3-C_{12} branched alkylene, phenylene, C_7-C_{12} alkylenearylene, and mixtures thereof; R^{19} is hydrogen, C_1-C_{22} substituted or unsubstituted, linear or branched alkyl; C_3-C_{22} substituted or unsubstituted, linear or branched cycloalkyl; C_2-C_{22} substituted or unsubstituted, linear or branched alkenyl; C_2-C_{22} substituted or unsubstituted, linear or branched alkynyl; C_6-C_{22} substituted or unsubstituted aryl; and mixtures thereof;

ii) a unit having the formula:



wherein R^2 is hydrogen, C_1-C_4 alkyl, and mixtures thereof; x and y are each independently from 0 to 100;

iii) a polyamine unit having the formula:

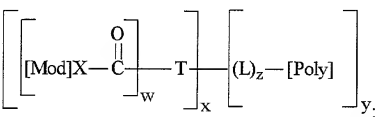


wherein R is C_2-C_{12} linear alkylene, C_3-C_{12} branched alkylene, and mixtures thereof; j and k are such that the molecular weight of said polyamine does not exceed 30,000 daltons; and

iv) mixtures thereof.

4. A compound according to Claim 1 having a formula selected from:

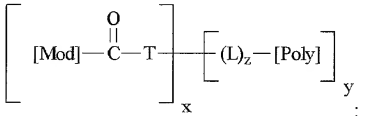
i)



wherein T is a template; [Mod] is C_1-C_{12} alkyl, or a unit which is further attached to said T unit; L is a linking unit; [Poly] is a polymer component; X is

X is CH_2, NH, O, S, CF_2, and mixtures thereof; w is from 1 to 6, x is from 1 to 50, y is from 1 to 10, z is 0 or 1;

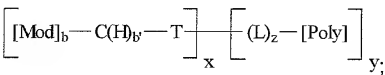
ii)



;

wherein T is a template; [Mod] is hydrogen, C_1-C_{12} alkyl, or mixtures thereof; L is a linking unit; [Poly] is a polymer component; x is from 1 to 50, y is from 1 to 10, z is 0 or 1;

iii)



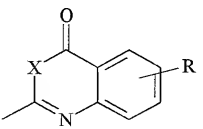
;

wherein T is a template; [Mod] is C_1-C_{12} alkoxy unit; L is a linking unit; [Poly] is a polymer component; b has the value of 2 or 3 and b' has the value of 0 or 1; provided b + b' = 3, x is from 1 to 50, y is from 1 to 10, z is 0 or 1;

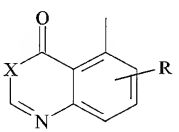
iv) or mixtures thereof.

5. A compound according to Claim 1 comprising a [Mod]-XC(O)-T having the formula selected from the group consisting of:

i)



ii)



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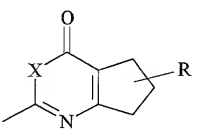

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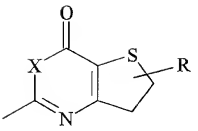

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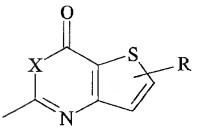

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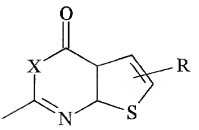

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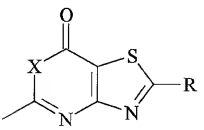

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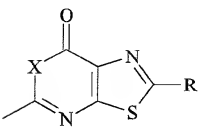

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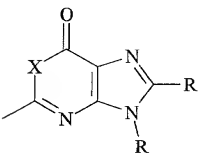

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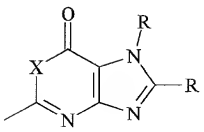

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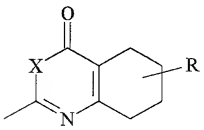

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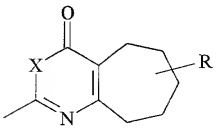

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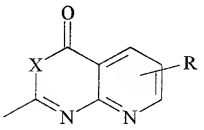

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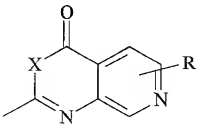

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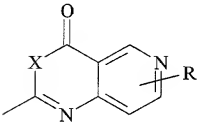

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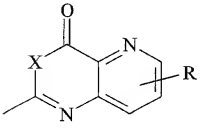

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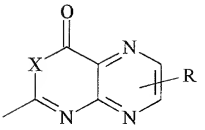

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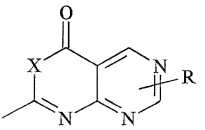

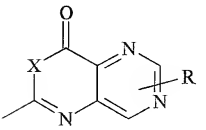

xx) and mixtures thereof;

wherein each R is independently:

a) hydrogen;

b) C_1-C_{18} substituted or unsubstituted, linear or branched alkyl;

c) C_3-C_{18} substituted or unsubstituted, linear or branched cycloalkyl

d) C_2-C_{18} substituted or unsubstituted, linear or branched alkenyl;

e) C_2-C_{18} substituted or unsubstituted, linear or branched alkynyl;

f) C_6-C_{18} substituted or unsubstituted aryl;

g) C_2-C_{18} substituted or unsubstituted heterocyclic alkyl;

h) C_3-C_{18} substituted or unsubstituted heterocyclic alkenyl;

i) alkylenearyl having the formula:

$$-(R^1)_n-R^2$$

wherein R^1 is C_1-C_{12} linear or branched alkylene, C_2-C_{12} linear or branched alkenylene, or mixtures thereof; R^2 C_6-C_{18} substituted or unsubstituted aryl, or mixtures thereof; n is from 1 to 16;

j) an amino unit having the formula:

$$-(CH_2)_mN(R^3)_2$$

wherein each R^3 is independently C_1-C_{18} substituted or unsubstituted, linear or branched alkyl; m is from 0 to 10;

k) a quaternary ammonium unit having the formula:

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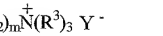
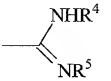


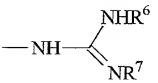
wherein each R^3 is independently C_1-C_{18} substituted or unsubstituted, linear or branched alkyl; Y is an anion of sufficient charge to provide electronic neutrality; m is from 0 to 10;

l) a unit having the formula:



wherein R^4 is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^5 is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^4 and R^5 can be taken together to form a heterocyclic ring comprising from 3 to 5 carbon atoms;

m) a unit having the formula:



wherein R^6 is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^7 is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^6 and R^7 can be taken together to form a heterocyclic ring comprising from 3 to 5 carbon atoms;

n) a unit having the formula:

wherein R^8 is:

i) $-(CH_2)_p-$, wherein p is from 0 to 12;

ii) -C(O)-;

iii) $-C(X)NR^{10}-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

iv) $-C(X)R^{11}C(X)-$, wherein R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

v) $-C(X)NR^{10}C(X)-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

vi) $-C(X)NR^{10}R^{11}NR^{10}C(X)-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^{11} is C_1-C_{12} alkylene, substituted or

unsubstituted phenylene, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

vii) $-NR^{10}C(X)-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

viii) $-NR^{10}C(X)NR^{10}-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

ix) $-NR^{10}C(X)R^{11}NR^{10}-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

x) $-NR^{10}R^{11}C(X)NR^{10}-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

xi) $-NR^{10}C(X)R^{11}C(X)O-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

xii) $-OC(X)R^{11}C(X)NR^{10}-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

xiii) $-NR^{10}C(X)NR^{10}R^{11}-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

xiv) $-R^{11}NR^{10}C(X)NR^{10}-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; wherein X is oxygen, sulfur, NR^{10}, and mixtures thereof;

xv) $-R^{11}NR^{10}C(X)NR^{10}R^{11}-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

xvi) $-NR^{10}-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof;

xvii) -O-;

xviii) $-(R^{11})_tC(X)(R^{11})_t-$; wherein R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; t is 0 or 1; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

xix) $-(R^{11})_tOC(O)(R^{11})_t-$; wherein R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; t is 0 or 1;

xx) $-(R^{11})_tC(O)O(R^{11})_t-$; wherein R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; t is 0 or 1;

xxi) alkyleneoxyalkylene having the formula:

$$—(R^{12}O)_qR^{13}—$$

wherein R^{12} is C_2-C_6 linear or branched alkylene, substituted or unsubstituted phenylene; R^{13} is $-(CH_2)_p-$, wherein p is from 0 to 12; q is from 1 to 4;

xxii) -S-;

xxiii) $-(R^{11})_tS(R^{11})_t-$; wherein R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; t is 0 or 1;

xxiv) $-(R^{11})_tS(O)(R^{11})_t-$; wherein R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; t is 0 or 1;

xxv) $-(R^{11})_tSO_2(R^{11})_t-$; wherein R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; t is 0 or 1;

xxvi) or mixtures thereof;

R^9 is:

i) hydrogen;

ii) C_1-C_{18} substituted or unsubstituted, linear or branched alkyl;

iii) C_3-C_{18} substituted or unsubstituted, linear or branched cycloalkyl

iv) C_2-C_{18} substituted or unsubstituted, linear or branched alkenyl;

v) C_2-C_{18} substituted or unsubstituted, linear or branched alkynyl;

vi) C_6-C_{18} substituted or unsubstituted aryl;

vii) C_2-C_{18} substituted or unsubstituted heterocyclic alkyl;

viii) C_3-C_{18} substituted or unsubstituted heterocyclic alkenyl;

ix) -OH;

x) $-SO_3M$;

xi) $-OSO_3M$;

xii) $-NO_2$;

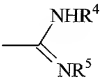
xiii) halogen selected from fluorine, chlorine, bromine, iodine, or mixtures thereof;

xiv) $-C(Hal)_3$, wherein each Hal is fluorine, chlorine, bromine, iodine, or mixtures thereof;

xv) $-COR^{14}$; wherein R^{14} is hydrogen, -OH, C_1-C_{12} alkyl, C_1-C_{12} alkoxy, or mixtures thereof; $-N(R^{15})_2$, or mixtures thereof; each R^{15} is independently hydrogen, -OH, C_1-C_4 alkyl, or mixtures thereof;

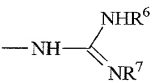
xvi) $-CH(OR^{14})_2$ wherein R^{14} is hydrogen, C_1-C_{12} alkyl, or two R^{14} units can be taken together to form a ring having from 3 to 5 carbon atoms; or mixtures thereof;

xvii) a unit having the formula:



wherein R^4 is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^5 is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^4 and R^5 can be taken together to form a heterocyclic ring comprising from 3 to 5 carbon atoms;

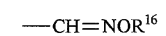
xviii) a unit having the formula:



wherein R^6 is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^7 is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^6 and R^7 can be taken together to form a heterocyclic ring comprising from 3 to 5 carbon atoms;

xix) $-NHOR^{16}$, wherein R^{16} is hydrogen; C_1-C_{12} linear or branched alkyl; acyl having the formula $-COR^{17}$, wherein R^{17} is C_1-C_4 alkyl; or mixtures thereof;

xx) a unit having the formula:



wherein R^{16} is hydrogen; C_1-C_{12} linear or branched alkyl; C_7-C_{22} linear or branched alkylenearyl; acyl having the formula -COR^{17}, R^{17} is C_1-C_4 alkyl; or mixtures thereof;

xxi) an amino unit having the formula:

$$-(CH_2)_mN(R^3)_2$$

wherein each R^3 is independently C_1-C_{18} substituted or unsubstituted, linear or branched alkyl; m is from 0 to 10;

xxii) a quaternary ammonium unit having the formula:

$$-(CH_2)_m\overset{+}{N}(R^3)_3\ Y^-$$

wherein each R^3 is independently C_1-C_{18} substituted or unsubstituted, linear or branched alkyl; Y is an anion of sufficient charge to provide electronic neutrality; m is from 0 to 10;

o) two R units on the same carbon atom can be taken together to form a carbonyl unit or carbonyl unit equivalent; and

p) mixtures thereof;

X is selected from the group consisting of CH_2, NH, O, S, CF_2, and mixtures thereof.

6. A compound according to Claim 1 wherein R is hydrogen, methyl, ethyl, amidinyl, guanidinyl, or mixtures thereof.

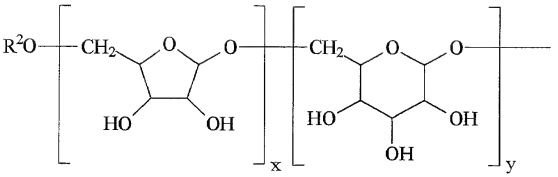
7. A compound according to Claim 1 wherein [Poly] units are selected from:

i) a unit having the formula:

$$R^{19}(OR^{18})_x-$$

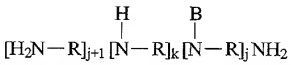
wherein R^{18} is C_2-C_{12} linear alkylene, C_3-C_{12} branched alkylene, phenylene, C_7-C_{12} alkylenearylene, and mixtures thereof; R^{19} is hydrogen, C_1-C_{22} substituted or unsubstituted, linear or branched alkyl; C_3-C_{22} substituted or unsubstituted, linear or branched cycloalkyl; C_2-C_{22} substituted or unsubstituted, linear or branched alkenyl; C_2-C_{22} substituted or unsubstituted, linear or branched alkynyl; C_6-C_{22} substituted or unsubstituted aryl; and mixtures thereof;

ii) a unit having the formula:



wherein R^2 is hydrogen, C_1-C_4 alkyl, and mixtures thereof; x and y are each independently from 0 to 100;

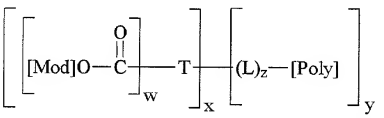
iii) a polyamine unit having the formula:



wherein R is C_2-C_{12} linear alkylene, C_3-C_{12} branched alkylene, and mixtures thereof; j and k are such that the molecular weight of said polyamine does not exceed 30,000 daltons; and

iv) mixtures thereof.

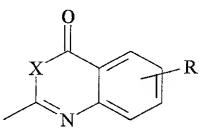
10. A compound according to Claim 8 wherein said polymer conjugate has the formula:



wherein T is an enzyme inhibitor component; L is a linking unit; [Poly] is a polymer component; [Mod]-OC(O)- is a unit which modulates the interaction of an acyl unit and a target enzyme; the indices have the following values: w is from 1 to 6, x is from 1 to 50, y is from 1 to 10, z is 0 or 1.

11. A composition according to Claim 8 comprising a [Mod]-XC(O)-T having the formula selected from the group consisting of:

i)



ii)

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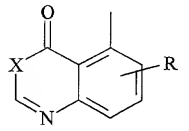

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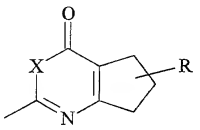

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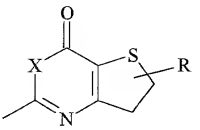
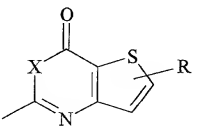


vi)



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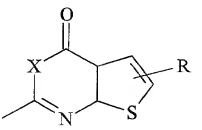

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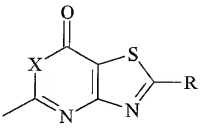

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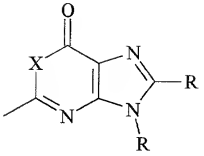

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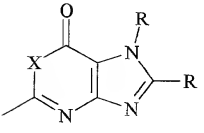

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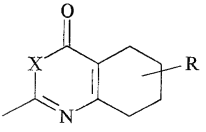

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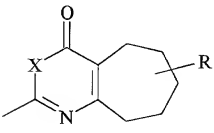

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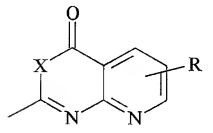

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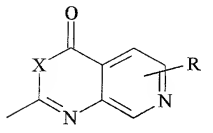

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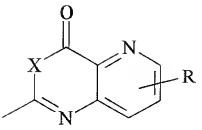

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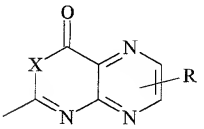

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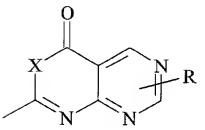

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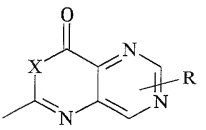


xx) and mixtures thereof;

wherein each R is independently:

a) hydrogen;

b) C_1-C_{18} substituted or unsubstituted, linear or branched alkyl;

c) C_3-C_{18} substituted or unsubstituted, linear or branched cycloalkyl

d) C_2-C_{18} substituted or unsubstituted, linear or branched alkenyl;

e) C_2-C_{18} substituted or unsubstituted, linear or branched alkynyl;

f) C_6-C_{18} substituted or unsubstituted aryl;

g) C_2-C_{18} substituted or unsubstituted heterocyclic alkyl;

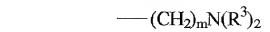
h) C_3-C_{18} substituted or unsubstituted heterocyclic alkenyl;

i) alkylenearyl having the formula:

$$-(R^1)_n-R^2$$

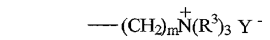
wherein R^1 is C_1-C_{12} linear or branched alkylene, C_2-C_{12} linear or branched alkenylene, or mixtures thereof; R^2 C_6-C_{18} substituted or unsubstituted aryl, or mixtures thereof; n is from 1 to 16;

j) an amino unit having the formula:



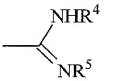
wherein each R^3 is independently C_1-C_{18} substituted or unsubstituted, linear or branched alkyl; m is from 0 to 10;

k) a quaternary ammonium unit having the formula:



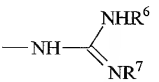
wherein each R^3 is independently C_1-C_{18} substituted or unsubstituted, linear or branched alkyl; Y is an anion of sufficient charge to provide electronic neutrality; m is from 0 to 10;

l) a unit having the formula:



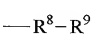
wherein R^4 is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^5 is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^4 and R^5 can be taken together to form a heterocyclic ring comprising from 3 to 5 carbon atoms;

m) a unit having the formula:



wherein R^6 is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^7 is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^6 and R^7 can be taken together to form a heterocyclic ring comprising from 3 to 5 carbon atoms;

n) a unit having the formula:



wherein R^8 is:

i) $-(CH_2)_p-$, wherein p is from 0 to 12;

ii) -C(O)-;

iii) $-C(X)NR^{10}-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

iv) $-C(X)R^{11}C(X)-$, wherein R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

v) -C(X)NR^{10}C(X)-, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

vi) -C(X)NR^{10}R^{11}NR^{10}C(X)-, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

vii) -NR^{10}C(X)-, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

viii) -NR^{10}C(X)NR^{10}-, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof,

ix) -NR^{10}C(X)R^{11}NR^{10}-, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

x) -NR^{10}R^{11}C(X)NR^{10}-, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

xi) -NR^{10}C(X)R^{11}C(X)O-, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

xii) -OC(X)R^{11}C(X)NR^{10}-, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

xiii) -NR^{10}C(X)NR^{10}R^{11}-, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

xiv) -R^{11}NR^{10}C(X)NR^{10}-, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; wherein X is oxygen, sulfur, NR^{10}, and mixtures thereof;

xv) $-R^{11}NR^{10}C(X)NR^{10}R^{11}-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

xvi) $-NR^{10}-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof;

xvii) -O-;

xviii) $-(R^{11})_tC(X)(R^{11})_t-$; wherein R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; t is 0 or 1; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

xix) $-(R^{11})_tOC(O)(R^{11})_t-$; wherein R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; t is 0 or 1;

xx) $-(R^{11})_tC(O)O(R^{11})_t-$; wherein R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; t is 0 or 1;

xxi) alkyleneoxyalkylene having the formula:

$$—(R^{12}O)_qR^{13}—$$

wherein R^{12} is C_2-C_6 linear or branched alkylene, substituted or unsubstituted phenylene; R^{13} is $-(CH_2)_p-$, wherein p is from 0 to 12; q is from 1 to 4;

xxii) -S-;

xxiii) $-(R^{11})_tS(R^{11})_t-$; wherein R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; t is 0 or 1;

xxiv) $-(R^{11})_tS(O)(R^{11})_t-$; wherein R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; t is 0 or 1;

xxv) $-(R^{11})_tSO_2(R^{11})_t-$; wherein R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; t is 0 or 1;

xxvi) or mixtures thereof;

R^9 is:

i) hydrogen;

ii) C_1-C_{18} substituted or unsubstituted, linear or branched alkyl;

iii) C_3-C_{18} substituted or unsubstituted, linear or branched cycloalkyl

iv) C_2-C_{18} substituted or unsubstituted, linear or branched alkenyl;

v) C_2-C_{18} substituted or unsubstituted, linear or branched alkynyl;

vi) C_6-C_{18} substituted or unsubstituted aryl;

vii) C_2-C_{18} substituted or unsubstituted heterocyclic alkyl;

viii) C_3-C_{18} substituted or unsubstituted heterocyclic alkenyl;

ix) -OH;

x) $-SO_3M$;

xi) $-OSO_3M$;

xii) $-NO_2$;

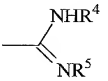
xiii) halogen selected from fluorine, chlorine, bromine, iodine, or mixtures thereof;

xiv) $-C(Hal)_3$, wherein each Hal is fluorine, chlorine, bromine, iodine, or mixtures thereof;

xv) $-COR^{14}$; wherein R^{14} is hydrogen, -OH, C_1-C_{12} alkyl, C_1-C_{12} alkoxy, or mixtures thereof; $-N(R^{15})_2$, or mixtures thereof; each R^{15} is independently hydrogen, -OH, C_1-C_4 alkyl, or mixtures thereof;

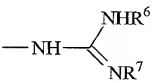
xvi) $-CH(OR^{14})_2$ wherein R^{14} is hydrogen, C_1-C_{12} alkyl, or two R^{14} units can be taken together to form a ring having from 3 to 5 carbon atoms; or mixtures thereof;

xvii) a unit having the formula:



wherein R^4 is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^5 is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^4 and R^5 can be taken together to form a heterocyclic ring comprising from 3 to 5 carbon atoms;

xviii) a unit having the formula:



wherein R^6 is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^7 is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^6 and R^7 can be taken together to form a heterocyclic ring comprising from 3 to 5 carbon atoms;

xix) $-NHOR^{16}$, wherein R^{16} is hydrogen; C_1-C_{12} linear or branched alkyl; acyl having the formula $-COR^{17}$, wherein R^{17} is C_1-C_4 alkyl; or mixtures thereof;

xx) a unit having the formula:

$$—CH=NOR^{16}$$

wherein R^{16} is hydrogen; C_1-C_{12} linear or branched alkyl; C_7-C_{22} linear or branched alkylenearyl; acyl having the formula -COR^{17}, R^{17} is C_1-C_4 alkyl; or mixtures thereof;

xxi) an amino unit having the formula:

$$—(CH_2)_mN(R^3)_2$$

wherein each R^3 is independently C_1-C_{18} substituted or unsubstituted, linear or branched alkyl; m is from 0 to 10;

xxii) a quaternary ammonium unit having the formula:

$$—(CH_2)_m\overset{+}{N}(R^3)_3\ Y^-$$

wherein each R^3 is independently C_1-C_{18} substituted or unsubstituted, linear or branched alkyl; Y is an anion of sufficient charge to provide electronic neutrality; m is from 0 to 10;

o) two R units on the same carbon atom can be taken together to form a carbonyl unit or carbonyl unit equivalent; and

p) mixtures thereof;

X is selected from the group consisting of -CH_2-, -NH-, -O-, -S-, -CF_2-, and mixtures thereof.

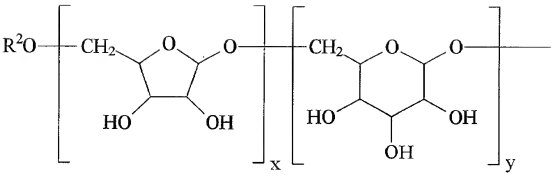
12. A composition according to Claim 8 wherein [Poly] units are selected from:

i) a unit having the formula:

$$R^{19}(OR^{18})_x—$$

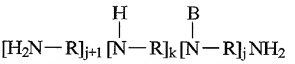
wherein R^{18} is C_2-C_{12} linear alkylene, C_3-C_{12} branched alkylene, phenylene, C_7-C_{12} alkylenearylene, and mixtures thereof; R^{19} is hydrogen, C_1-C_{22} substituted or unsubstituted, linear or branched alkyl; C_3-C_{22} substituted or unsubstituted, linear or branched cycloalkyl; C_2-C_{22} substituted or unsubstituted, linear or branched alkenyl; C_2-C_{22} substituted or unsubstituted, linear or branched alkynyl; C_6-C_{22} substituted or unsubstituted aryl; and mixtures thereof;

ii) a unit having the formula:



wherein R^2 is hydrogen, C_1-C_4 alkyl, and mixtures thereof; x and y are each independently from 0 to 100;

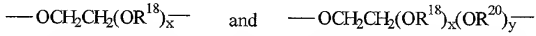
iii) a polyamine unit having the formula:



wherein R is C_2-C_{12} linear alkylene, C_3-C_{12} branched alkylene, and mixtures thereof; j and k are such that the molecular weight of said polyamine does not exceed 30,000 daltons; and

iv) mixtures thereof.

13. A composition according to Claim 8 wherein [Poly] units have the formulae:



R^{18} ethylene and R^{20} is 2-propylene and when R^{18}, OR^{19}, and OR^{20} are taken together said [Poly] unit has a molecular weight of from 500 daltons, to 10,000 daltons.

REMARKS

Claims 1, 2, 8 and 9 remain in this application. Claims 3-7 and 10-13 have been amended by eliminating multiple dependencies. Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached page is captioned "Version With Markings to Show Changes Made."

The support for these amendments is found in the claims as originally filed. These amendments are being entered to bring the claims into conformance with, *inter alia*, 37 CFR §1.75, no new matter is added.

Respectfully submitted for Applicants,

By _____

T, David Reed
Agent for Applicant
Registration No. 32,931

Cincinnati, Ohio
03 March 2002
(513)627-7025/FAX (513)627-6333

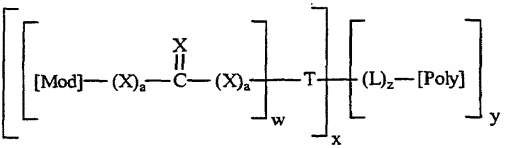
PATENT APPLICATION

"VERSION WITH MARKINGS TO SHOW CHANGES MADE"

WHAT IS CLAIMED IS:

1. A polymer conjugate which inhibits protease or lipase enzyme, said polymer conjugate comprising a polymer component bonded to an enzyme inhibitor component having an acyl unit capable of inhibiting the activity of one or more protease or lipase enzymes, wherein said inhibitor component is directly bonded to said polymer component or is attached thereto by a linking unit, said linking unit optionally capable of modulating the interaction between a target enzyme and said inhibitor component, and wherein further said polymer component remains bonded to said inhibitor component after said acyl unit interacts with said target enzyme.

2. A compound according to Claim 1 having the formula:



wherein said polymer component comprises a polymer unit [Poly] and optionally a linking unit, L; said inhibitor component comprises a template unit, T, an acyl unit having the formula $[Mod](X)_aC(X)(X)_a$; wherein [Mod] is a modulating unit independently selected from:

a) hydrogen;

b) C_1-C_{18} substituted or unsubstituted, linear or branched alkyl;

c) C_3-C_{18} substituted or unsubstituted, cycloalkyl;

d) C_2-C_{18} substituted or unsubstituted, linear or branched alkenyl;

e) C_2-C_{18} substituted or unsubstituted, linear or branched alkynyl;

f) C_6-C_{18} substituted or unsubstituted aryl;

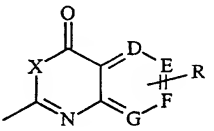
g) a unit which is tied back to said T unit to form a ring comprising from 1 to 5 carbon atoms; and

h) mixtures thereof;

X is CH_2, NH, O, S, CF_2, and mixtures thereof; each index a is independently 0 or 1, w is from 1 to 6, x is from 1 to 50, y is from 1 to 10, z is 0 or 1.

3. A compound according to either Claim 1 or 2 comprising an acyl unit having the formula [Mod]-XC(O)-T wherein said unit is tied back to said T unit to form a ring comprising from 1 to 5 carbon atoms having the formula selected from the group consisting of:

i)



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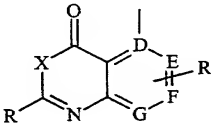

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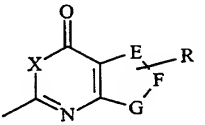
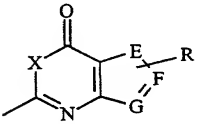
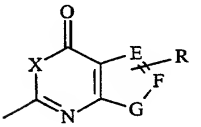


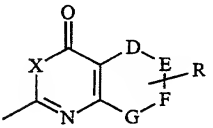
iv)



v)



vii)



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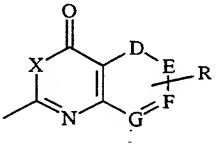
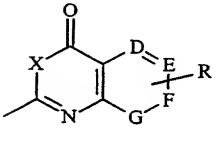
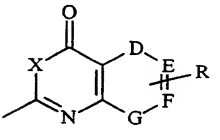


ix)





x) and mixtures thereof;

wherein each R is independently:

a) hydrogen;

b) C_1-C_{18} substituted or unsubstituted, linear or branched alkyl;

c) C_3-C_{18} substituted or unsubstituted, linear or branched cycloalkyl

d) C_2-C_{18} substituted or unsubstituted, linear or branched alkenyl;

e) C_2-C_{18} substituted or unsubstituted, linear or branched alkynyl;

f) C_6-C_{18} substituted or unsubstituted aryl;

g) C_2-C_{18} substituted or unsubstituted heterocyclic alkyl;

h) C_3-C_{18} substituted or unsubstituted heterocyclic alkenyl;

i) alkylenearyl having the formula:

$$—(R^1)_n—R^2$$

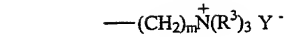
wherein R^1 is C_1-C_{12} linear or branched alkylene, C_2-C_{12} linear or branched alkenylene, or mixtures thereof; R^2 C_6-C_{18} substituted or unsubstituted aryl, or mixtures thereof; n is from 1 to 16;

j) an amino unit having the formula:

$$—(CH_2)_mN(R^3)_2$$

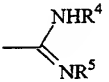
wherein each R^3 is independently C_1-C_{18} substituted or unsubstituted, linear or branched alkyl; m is from 0 to 10;

k) a quaternary ammonium unit having the formula:



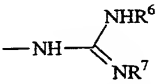
wherein each R^3 is independently C_1-C_{18} substituted or unsubstituted, linear or branched alkyl; Y is an anion of sufficient charge to provide electronic neutrality; m is from 0 to 10;

l) a unit having the formula:



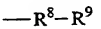
wherein R^4 is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^5 is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^4 and R^5 can be taken together to form a heterocyclic ring comprising from 3 to 5 carbon atoms;

m) a unit having the formula:



wherein R^6 is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^7 is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^6 and R^7 can be taken together to form a heterocyclic ring comprising from 3 to 5 carbon atoms;

n) a unit having the formula:



wherein R^8 is:

i) $-(CH_2)_p-$, wherein p is from 0 to 12;

ii) -C(O)-;

iii) $-C(X)NR^{10}-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

iv) $-C(X)R^{11}C(X)-$, wherein R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

v) $-C(X)NR^{10}C(X)-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

vi) $-C(X)NR^{10}R^{11}NR^{10}C(X)-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^{11} is C_1-C_{12} alkylene, substituted or

unsubstituted phenylene, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

vii) $-NR^{10}C(X)-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

viii) $-NR^{10}C(X)NR^{10}-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

ix) $-NR^{10}C(X)R^{11}NR^{10}-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

x) $-NR^{10}R^{11}C(X)NR^{10}-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

xi) $-NR^{10}C(X)R^{11}C(X)O-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

xii) $-OC(X)R^{11}C(X)NR^{10}-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

xiii) $-NR^{10}C(X)NR^{10}R^{11}-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

xiv) $-R^{11}NR^{10}C(X)NR^{10}-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; wherein X is oxygen, sulfur, NR^{10}, and mixtures thereof;

xv) $-R^{11}NR^{10}C(X)NR^{10}R^{11}-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

xvi) $-NR^{10}-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof;

xvii) -O-;

xviii) $-(R^{11})_tC(X)(R^{11})_t-$; wherein R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; t is 0 or 1; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

xix) $-(R^{11})_tOC(O)(R^{11})_t-$; wherein R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; t is 0 or 1;

xx) $-(R^{11})_tC(O)O(R^{11})_t-$; wherein R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; t is 0 or 1;

xxi) alkyleneoxyalkylene having the formula:

$$—(R^{12}O)_qR^{13}—$$

wherein R^{12} is C_2-C_6 linear or branched alkylene, substituted or unsubstituted phenylene; R^{13} is $-(CH_2)_p-$, wherein p is from 0 to 12; q is from 1 to 4;

xxii) -S-;

xxiii) $-(R^{11})_tS(R^{11})_t-$; wherein R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; t is 0 or 1;

xxiv) $-(R^{11})_tS(O)(R^{11})_t-$; wherein R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; t is 0 or 1;

xxv) $-(R^{11})_tSO_2(R^{11})_t-$; wherein R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; t is 0 or 1;

xxvi) or mixtures thereof;

R^9 is:

i) hydrogen;

ii) C_1-C_{18} substituted or unsubstituted, linear or branched alkyl;

iii) C_3-C_{18} substituted or unsubstituted, linear or branched cycloalkyl

iv) C_2-C_{18} substituted or unsubstituted, linear or branched alkenyl;

v) C_2-C_{18} substituted or unsubstituted, linear or branched alkynyl;

vi) C_6-C_{18} substituted or unsubstituted aryl;

vii) C_2-C_{18} substituted or unsubstituted heterocyclic alkyl;

viii) C_3-C_{18} substituted or unsubstituted heterocyclic alkenyl;

ix) -OH;

x) $-SO_3M$;

xi) $-OSO_3M$;

xii) $-NO_2$;

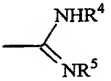
xiii) halogen selected from fluorine, chlorine, bromine, iodine, or mixtures thereof;

xiv) $-C(Hal)_3$, wherein each Hal is fluorine, chlorine, bromine, iodine, or mixtures thereof;

xv) $-COR^{14}$; wherein R^{14} is hydrogen, -OH, C_1-C_{12} alkyl, C_1-C_{12} alkoxy, or mixtures thereof; $-N(R^{15})_2$, or mixtures thereof; each R^{15} is independently hydrogen, -OH, C_1-C_4 alkyl, or mixtures thereof;

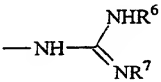
xvi) $-CH(OR^{14})_2$ wherein R^{14} is hydrogen, C_1-C_{12} alkyl, or two R^{14} units can be taken together to form a ring having from 3 to 5 carbon atoms; or mixtures thereof;

xvii) a unit having the formula:



wherein R^4 is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^5 is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^4 and R^5 can be taken together to form a heterocyclic ring comprising from 3 to 5 carbon atoms;

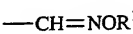
xviii) a unit having the formula:



wherein R^6 is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^7 is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^6 and R^7 can be taken together to form a heterocyclic ring comprising from 3 to 5 carbon atoms;

xix) $-NHOR^{16}$, wherein R^{16} is hydrogen; C_1-C_{12} linear or branched alkyl; acyl having the formula $-COR^{17}$, wherein R^{17} is C_1-C_4 alkyl; or mixtures thereof;

xx) a unit having the formula:



wherein R^{16} is hydrogen; C_1-C_{12} linear or branched alkyl; C_7-C_{22} linear or branched alkylenearyl; acyl having the formula $-COR^{17}$, R^{17} is C_1-C_4 alkyl; or mixtures thereof;

xxi) an amino unit having the formula:

$$-(CH_2)_mN(R^3)_2$$

wherein each R^3 is independently C_1-C_{18} substituted or unsubstituted, linear or branched alkyl; m is from 0 to 10;

xxii) a quaternary ammonium unit having the formula:

$$-(CH_2)_m\overset{+}{N}(R^3)_3\ Y^-$$

wherein each R^3 is independently C_1-C_{18} substituted or unsubstituted, linear or branched alkyl; Y is an anion of sufficient charge to provide electronic neutrality; m is from 0 to 10;

o) two R units on the same carbon atom can be taken together to form a carbonyl unit or carbonyl unit equivalent; and

p) mixtures thereof;

D, E, F, and G are each independently selected from the group consisting of CH, CH_2, N, NH, O, S, CF_2, and mixtures thereof;

L is selected from the group consisting of:

i) $-(CH_2)_p-$, wherein p is from 0 to 12;

ii) -C(O)-;

iii) $-C(X)NR^{10}-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

iv) $-C(X)R^{11}C(X)-$, wherein R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

v) $-C(X)NR^{10}C(X)-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

vi) $-C(X)NR^{10}R^{11}NR^{10}C(X)-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

vii) $-NR^{10}C(X)-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

viii) $-NR^{10}C(X)NR^{10}-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

ix) $-NR^{10}C(X)R^{11}NR^{10}-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

x) $-NR^{10}R^{11}C(X)NR^{10}-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

xi) $-NR^{10}C(X)R^{11}C(X)O-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

xii) $-OC(X)R^{11}C(X)NR^{10}-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

xiii) $-NR^{10}C(X)NR^{10}R^{11}-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

xiv) $-R^{11}NR^{10}C(X)NR^{10}-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

xv) $-R^{11}NR^{10}C(X)NR^{10}R^{11}-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

xvi) $-NR^{10}-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof;

xvii) -O-;

xviii) $-(R^{11})_tC(X)(R^{11})_t-$; wherein R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; t is 0 or 1; wherein X is oxygen, sulfur, NR^{10}, and mixtures thereof;

xix) $-(R^{11})_tOC(O)(R^{11})_t-$; wherein R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; t is 0 or 1;

xx) $-(R^{11})_tC(O)O(R^{11})_t-$; wherein R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; t is 0 or 1;

xxi) $-(R^{11})_tOC(O)O(R^{11})_t-$; wherein t is 0 or 1;

xxii) alkyleneoxyalkylene having the formula:

$$—(R^{12}O)_qR^{13}—$$

wherein R^{12} is C_2-C_6 linear or branched alkylene, substituted or unsubstituted phenylene; R^{13} is $-(CH_2)_p-$, wherein p is from 0 to 12; q is 1 or 2;

xxiii) -S-;

xxiv) $-(R^{11})_tS(R^{11})_t-$; wherein R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; t is 0 or 1;

xxv) $-(R^{11})_tS(O)(R^{11})_t-$; wherein R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; t is 0 or 1;

xxvi) $-(R^{11})_tSO_2(R^{11})_t-$; wherein R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; t is 0 or 1;

xxvii) or mixtures thereof; and

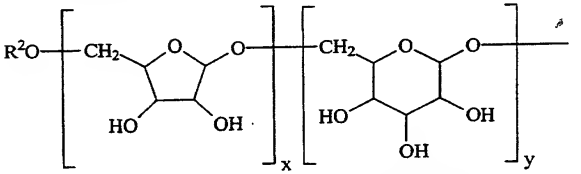
[Poly] units are selected from:

i) a unit having the formula:

$$R^{19}(OR^{18})_x—$$

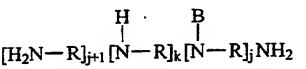
wherein R^{18} is C_2-C_{12} linear alkylene, C_3-C_{12} branched alkylene, phenylene, C_7-C_{12} alkylenearylene, and mixtures thereof; R^{19} is hydrogen, C_1-C_{22} substituted or unsubstituted, linear or branched alkyl; C_3-C_{22} substituted or unsubstituted, linear or branched cycloalkyl; C_2-C_{22} substituted or unsubstituted, linear or branched alkenyl; C_2-C_{22} substituted or unsubstituted, linear or branched alkynyl; C_6-C_{22} substituted or unsubstituted aryl; and mixtures thereof;

ii) a unit having the formula:



wherein R^2 is hydrogen, C_1-C_4 alkyl, and mixtures thereof; x and y are each independently from 0 to 100;

iii) a polyamine unit having the formula:

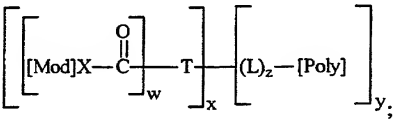


wherein R is C_2-C_{12} linear alkylene, C_3-C_{12} branched alkylene, and mixtures thereof; j and k are such that the molecular weight of said polyamine does not exceed 30,000 daltons; and

iv) mixtures thereof.

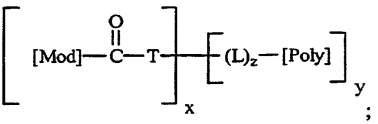
4. A compound according to any of Claims 1-4 having a formula selected from:

i)



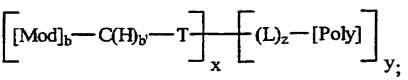
wherein T is a template; [Mod] is C_1-C_{12} alkyl, or a unit which is further attached to said T unit; L is a linking unit; [Poly] is a polymer component; X is X is CH_2, NH, O, S, CF_2, and mixtures thereof; w is from 1 to 6, x is from 1 to 50, y is from 1 to 10, z is 0 or 1;

ii)



wherein T is a template; [Mod] is hydrogen, C_1-C_{12} alkyl, or mixtures thereof; L is a linking unit; [Poly] is a polymer component; x is from 1 to 50, y is from 1 to 10, z is 0 or 1;

iii)

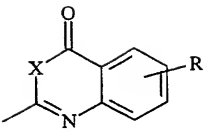


wherein T is a template; [Mod] is C_1-C_{12} alkoxy unit; L is a linking unit; [Poly] is a polymer component; b has the value of 2 or 3 and b' has the value of 0 or 1; provided b + b' = 3, x is from 1 to 50, y is from 1 to 10, z is 0 or 1;

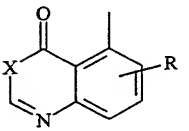
iv) or mixtures thereof.

5. A compound according to any of Claims 1-4 comprising a [Mod]-XC(O)-T having the formula selected from the group consisting of:

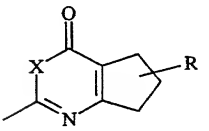
i)



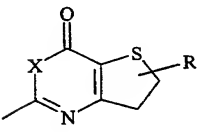
ii)



iii)



iv)



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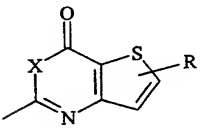

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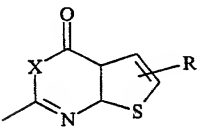

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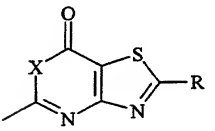
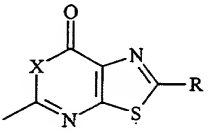


SUBSTITUTE SHEET (RULE 26)

viii)



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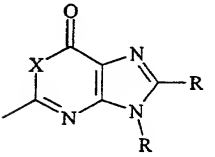

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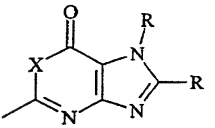

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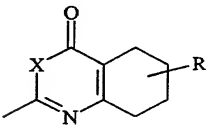

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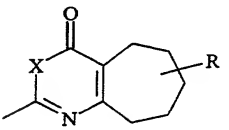

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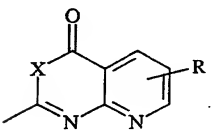

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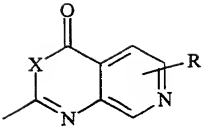

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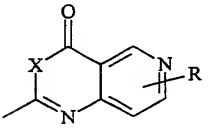

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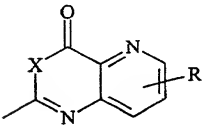

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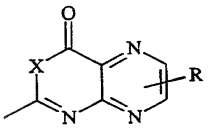

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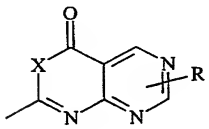

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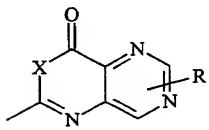


xx) and mixtures thereof;

wherein each R is independently:

a) hydrogen;

b) C_1-C_{18} substituted or unsubstituted, linear or branched alkyl;

c) C_3-C_{18} substituted or unsubstituted, linear or branched cycloalkyl

d) C_2-C_{18} substituted or unsubstituted, linear or branched alkenyl;

e) C_2-C_{18} substituted or unsubstituted, linear or branched alkynyl;

f) C_6-C_{18} substituted or unsubstituted aryl;

g) C_2-C_{18} substituted or unsubstituted heterocyclic alkyl;

h) C_3-C_{18} substituted or unsubstituted heterocyclic alkenyl;

i) alkylenearyl having the formula:

$$—(R^1)_n—R^2$$

wherein R^1 is C_1-C_{12} linear or branched alkylene, C_2-C_{12} linear or branched alkenylene, or mixtures thereof; R^2 C_6-C_{18} substituted or unsubstituted aryl, or mixtures thereof; n is from 1 to 16;

j) an amino unit having the formula:

$$—(CH_2)_mN(R^3)_2$$

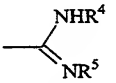
wherein each R^3 is independently C_1-C_{18} substituted or unsubstituted, linear or branched alkyl; m is from 0 to 10;

k) a quaternary ammonium unit having the formula:

$$—(CH_2)_m\overset{+}{N}(R^3)_3\ Y^-$$

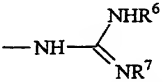
wherein each R^3 is independently C_1-C_{18} substituted or unsubstituted, linear or branched alkyl; Y is an anion of sufficient charge to provide electronic neutrality; m is from 0 to 10;

l) a unit having the formula:



wherein R^4 is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^5 is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^4 and R^5 can be taken together to form a heterocyclic ring comprising from 3 to 5 carbon atoms;

m) a unit having the formula:



wherein R^6 is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^7 is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^6 and R^7 can be taken together to form a heterocyclic ring comprising from 3 to 5 carbon atoms;

n) a unit having the formula:

$$—R^8—R^9$$

wherein R^8 is:

i) $-(CH_2)_p-$, wherein p is from 0 to 12;

ii) -C(O)-;

iii) $-C(X)NR^{10}-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

iv) $-C(X)R^{11}C(X)-$, wherein R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

v) $-C(X)NR^{10}C(X)-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

vi) $-C(X)NR^{10}R^{11}NR^{10}C(X)-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

vii) $-NR^{10}C(X)-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

viii) $-NR^{10}C(X)NR^{10}-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

ix) $-NR^{10}C(X)R^{11}NR^{10}-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

x) $-NR^{10}R^{11}C(X)NR^{10}-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

xi) $-NR^{10}C(X)R^{11}C(X)O-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

xii) $-OC(X)R^{11}C(X)NR^{10}-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^{11} is C_1-C_{12} alkylene, substituted or

unsubstituted phenylene, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

xiii) $-NR^{10}C(X)NR^{10}R^{11}-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

xiv) $-R^{11}NR^{10}C(X)NR^{10}-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; wherein X is oxygen, sulfur, NR^{10}, and mixtures thereof;

xv) $-R^{11}NR^{10}C(X)NR^{10}R^{11}-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

xvi) $-NR^{10}-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof;

xvii) -O-;

xviii) $-(R^{11})_tC(X)(R^{11})_t-$; wherein R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; t is 0 or 1; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

xix) $-(R^{11})_tOC(O)(R^{11})_t-$; wherein R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; t is 0 or 1;

xx) $-(R^{11})_tC(O)O(R^{11})_t-$; wherein R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; t is 0 or 1;

xxi) alkyleneoxyalkylene having the formula:

$$—(R^{12}O)_qR^{13}—$$

wherein R^{12} is C_2-C_6 linear or branched alkylene, substituted or unsubstituted phenylene; R^{13} is $-(CH_2)_p-$, wherein p is from 0 to 12; q is from 1 to 4;

xxii) -S-;

xxiii) $-(R^{11})_tS(R^{11})_t-$; wherein R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; t is 0 or 1;

xxiv) $-(R^{11})_tS(O)(R^{11})_t-$; wherein R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; t is 0 or 1;

SUBSTITUTE SHEET (RULE 26)

xxv) $-(R^{11})_tSO_2(R^{11})_t-$; wherein R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; t is 0 or 1;

xxvi) or mixtures thereof;

R^9 is:

i) hydrogen;

ii) C_1-C_{18} substituted or unsubstituted, linear or branched alkyl;

iii) C_3-C_{18} substituted or unsubstituted, linear or branched cycloalkyl

iv) C_2-C_{18} substituted or unsubstituted, linear or branched alkenyl;

v) C_2-C_{18} substituted or unsubstituted, linear or branched alkynyl;

vi) C_6-C_{18} substituted or unsubstituted aryl;

vii) C_2-C_{18} substituted or unsubstituted heterocyclic alkyl;

viii) C_3-C_{18} substituted or unsubstituted heterocyclic alkenyl;

ix) -OH;

x) $-SO_3M$;

xi) $-OSO_3M$;

xii) $-NO_2$;

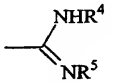
xiii) halogen selected from fluorine, chlorine, bromine, iodine, or mixtures thereof;

xiv) $-C(Hal)_3$, wherein each Hal is fluorine, chlorine, bromine, iodine, or mixtures thereof;

xv) $-COR^{14}$; wherein R^{14} is hydrogen, -OH, C_1-C_{12} alkyl, C_1-C_{12} alkoxy, or mixtures thereof; $-N(R^{15})_2$, or mixtures thereof; each R^{15} is independently hydrogen, -OH, C_1-C_4 alkyl, or mixtures thereof;

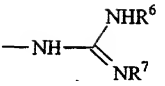
xvi) $-CH(OR^{14})_2$ wherein R^{14} is hydrogen, C_1-C_{12} alkyl, or two R^{14} units can be taken together to form a ring having from 3 to 5 carbon atoms; or mixtures thereof;

xvii) a unit having the formula:



wherein R^4 is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^5 is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^4 and R^5 can be taken together to form a heterocyclic ring comprising from 3 to 5 carbon atoms;

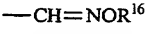
xviii) a unit having the formula:



wherein R^6 is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^7 is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^6 and R^7 can be taken together to form a heterocyclic ring comprising from 3 to 5 carbon atoms;

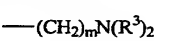
xix) -$NHOR^{16}$, wherein R^{16} is hydrogen; C_1-C_{12} linear or branched alkyl; acyl having the formula -COR^{17}, wherein R^{17} is C_1-C_4 alkyl; or mixtures thereof;

xx) a unit having the formula:



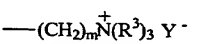
wherein R^{16} is hydrogen; C_1-C_{12} linear or branched alkyl; C_7-C_{22} linear or branched alkylenearyl; acyl having the formula -COR^{17}, R^{17} is C_1-C_4 alkyl; or mixtures thereof;

xxi) an amino unit having the formula:



wherein each R^3 is independently C_1-C_{18} substituted or unsubstituted, linear or branched alkyl; m is from 0 to 10;

xxii) a quaternary ammonium unit having the formula:



wherein each R^3 is independently C_1-C_{18} substituted or unsubstituted, linear or branched alkyl; Y is an anion of sufficient charge to provide electronic neutrality; m is from 0 to 10;

o) two R units on the same carbon atom can be taken together to form a carbonyl unit or carbonyl unit equivalent; and

p) mixtures thereof;

X is selected from the group consisting of CH_2, NH, O, S, CF_2, and mixtures thereof.

6. A compound according to any of CLAIM 1 Claims 1-6 wherein R is hydrogen, methyl, ethyl, amidinyl, guanidinyl, or mixtures thereof.

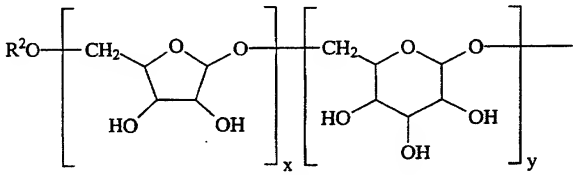
7. A compound according to [CLAIM 1] wherein [Poly] units are selected from:

i) a unit having the formula:

$$R^{19}(OR^{18})_x-$$

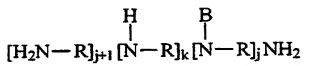
wherein R^{18} is C_2-C_{12} linear alkylene, C_3-C_{12} branched alkylene, phenylene, C_7-C_{12} alkylenearylene, and mixtures thereof; R^{19} is hydrogen, C_1-C_{22} substituted or unsubstituted, linear or branched alkyl; C_3-C_{22} substituted or unsubstituted, linear or branched cycloalkyl; C_2-C_{22} substituted or unsubstituted, linear or branched alkenyl; C_2-C_{22} substituted or unsubstituted, linear or branched alkynyl; C_6-C_{22} substituted or unsubstituted aryl; and mixtures thereof;

ii) a unit having the formula:



wherein R^2 is hydrogen, C_1-C_4 alkyl, and mixtures thereof; x and y are each independently from 0 to 100;

iii) a polyamine unit having the formula:



wherein R is C_2-C_{12} linear alkylene, C_3-C_{12} branched alkylene, and mixtures thereof; j and k are such that the molecular weight of said polyamine does not exceed 30,000 daltons; and

iv) mixtures thereof.

8. A polymer conjugate which inhibits protease or lipase enzyme, said polymer conjugate comprising:

a) a polymer component;

b) at least one enzyme inhibiting component, said enzyme inhibiting component comprising:

i) an acyl unit which interacts with at least one protease or lipase enzyme;

ii) optionally an enzyme directing or enzyme activating unit; and

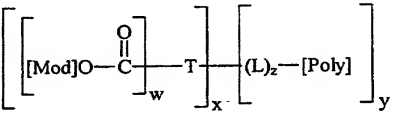
c) optionally one or more linking units which link said polymer component to said enzyme inhibiting component and which is further capable of interacting with a target enzyme to modulate the interaction of said enzyme inhibiting component with said target enzyme.

9. A composition for inhibiting enzymes comprising:

a) from 0.01% by weight, of one or more polymer conjugates which inhibit protease or lipase enzyme, said polymer conjugate comprising a polymer component bonded to an enzyme inhibitor component having an acyl unit capable of inhibiting the activity of more than one protease or lipase enzymes, wherein said inhibitor component is directly bonded to said polymer component or is bonded by a linking unit, said linking unit capable of modulating the interaction of a target enzyme and said inhibitor component wherein said polymer component remains bonded to said inhibitor component after said acyl unit interacts with said target enzyme; and

b) the balance carriers and adjunct ingredients.

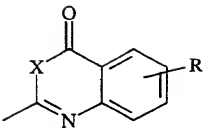
10. A compound according to either Claim 8 or 9 wherein said polymer conjugate has the formula:



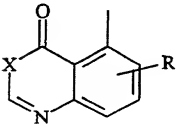
wherein T is an enzyme inhibitor component; L is a linking unit; [Poly] is a polymer component; [Mod]-OC(O)- is a unit which modulates the interaction of an acyl unit and a target enzyme; the indices have the following values: w is from 1 to 6, x is from 1 to 50, y is from 1 to 10, z is 0 or 1.

11. A composition according to any of Claims 8-11 comprising a [Mod]-XC(O)-T having the formula selected from the group consisting of:

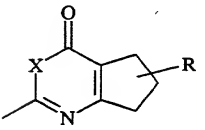
i)



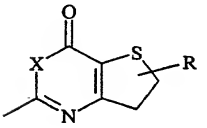
ii)



iii)



iv)



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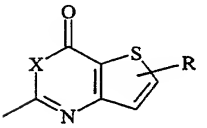

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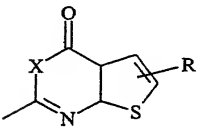

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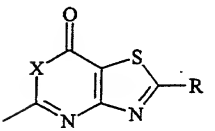

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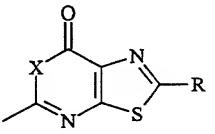

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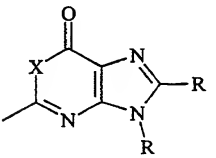

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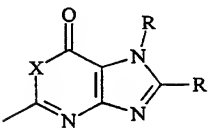

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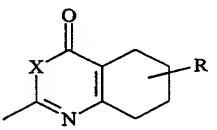

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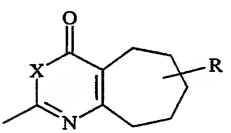

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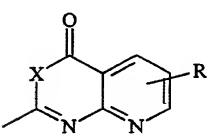

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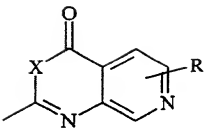

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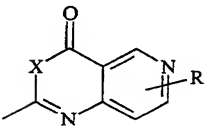

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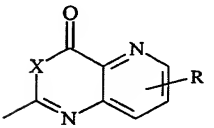

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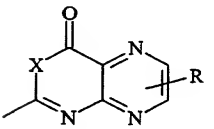
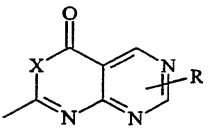
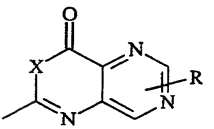


xviii)



xix)



xx) and mixtures thereof;

wherein each R is independently:

a) hydrogen;

b) C_1-C_{18} substituted or unsubstituted, linear or branched alkyl;

c) C_3-C_{18} substituted or unsubstituted, linear or branched cycloalkyl

d) C_2-C_{18} substituted or unsubstituted, linear or branched alkenyl;

e) C_2-C_{18} substituted or unsubstituted, linear or branched alkynyl;

f) C_6-C_{18} substituted or unsubstituted aryl;

g) C_2-C_{18} substituted or unsubstituted heterocyclic alkyl;

h) C_3-C_{18} substituted or unsubstituted heterocyclic alkenyl;

i) alkylenearyl having the formula:

$$—(R^1)_n—R^2$$

wherein R^1 is C_1-C_{12} linear or branched alkylene, C_2-C_{12} linear or branched alkenylene, or mixtures thereof; R^2 C_6-C_{18} substituted or unsubstituted aryl, or mixtures thereof; n is from 1 to 16;

j) an amino unit having the formula:

$$—(CH_2)_mN(R^3)_2$$

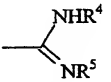
wherein each R^3 is independently C_1-C_{18} substituted or unsubstituted, linear or branched alkyl; m is from 0 to 10;

k) a quaternary ammonium unit having the formula:

$$—(CH_2)_m\overset{+}{N}(R^3)_3\ Y^-$$

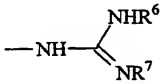
wherein each R^3 is independently C_1-C_{18} substituted or unsubstituted, linear or branched alkyl; Y is an anion of sufficient charge to provide electronic neutrality; m is from 0 to 10;

l) a unit having the formula:



wherein R^4 is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^5 is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^4 and R^5 can be taken together to form a heterocyclic ring comprising from 3 to 5 carbon atoms;

m) a unit having the formula:



wherein R^6 is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^7 is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^6 and R^7 can be taken together to form a heterocyclic ring comprising from 3 to 5 carbon atoms;

n) a unit having the formula:

$$—R^8—R^9$$

wherein R^8 is:

i) $-(CH_2)_p-$, wherein p is from 0 to 12;

ii) -C(O)-;

iii) $-C(X)NR^{10}-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

iv) $-C(X)R^{11}C(X)-$, wherein R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

v) $-C(X)NR^{10}C(X)-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

vi) $-C(X)NR^{10}R^{11}NR^{10}C(X)-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

vii) $-NR^{10}C(X)-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

viii) $-NR^{10}C(X)NR^{10}-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

ix) $-NR^{10}C(X)R^{11}NR^{10}-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

x) $-NR^{10}R^{11}C(X)NR^{10}-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

xi) $-NR^{10}C(X)R^{11}C(X)O-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

xii) $-OC(X)R^{11}C(X)NR^{10}-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^{11} is C_1-C_{12} alkylene, substituted or

unsubstituted phenylene, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

xiii) $-NR^{10}C(X)NR^{10}R^{11}-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

xiv) $-R^{11}NR^{10}C(X)NR^{10}-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; wherein X is oxygen, sulfur, NR^{10}, and mixtures thereof;

xv) $-R^{11}NR^{10}C(X)NR^{10}R^{11}-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

xvi) $-NR^{10}-$, wherein R^{10} is hydrogen, C_1-C_4 alkyl, or mixtures thereof;

xvii) -O-;

xviii) $-(R^{11})_tC(X)(R^{11})_r-$; wherein R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; t is 0 or 1; X is oxygen, sulfur, NR^{10}, and mixtures thereof;

xix) $-(R^{11})_tOC(O)(R^{11})_r-$; wherein R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; t is 0 or 1;

xx) $-(R^{11})_tC(O)O(R^{11})_r-$; wherein R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; t is 0 or 1;

xxi) alkyleneoxyalkylene having the formula:

$$—(R^{12}O)_qR^{13}—$$

wherein R^{12} is C_2-C_6 linear or branched alkylene, substituted or unsubstituted phenylene; R^{13} is $-(CH_2)_p-$, wherein p is from 0 to 12; q is from 1 to 4;

xxii) -S-;

xxiii) $-(R^{11})_tS(R^{11})_r-$; wherein R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; t is 0 or 1;

xxiv) $-(R^{11})_tS(O)(R^{11})_r-$; wherein R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; t is 0 or 1;

xxv) $-(R^{11})_tSO_2(R^{11})_t-$; wherein R^{11} is C_1-C_{12} alkylene, substituted or unsubstituted phenylene, or mixtures thereof; t is 0 or 1;

xxvi) or mixtures thereof;

R^9 is:

i) hydrogen;

ii) C_1-C_{18} substituted or unsubstituted, linear or branched alkyl;

iii) C_3-C_{18} substituted or unsubstituted, linear or branched cycloalkyl

iv) C_2-C_{18} substituted or unsubstituted, linear or branched alkenyl;

v) C_2-C_{18} substituted or unsubstituted, linear or branched alkynyl;

vi) C_6-C_{18} substituted or unsubstituted aryl;

vii) C_2-C_{18} substituted or unsubstituted heterocyclic alkyl;

viii) C_3-C_{18} substituted or unsubstituted heterocyclic alkenyl;

ix) -OH;

x) $-SO_3M$;

xi) $-OSO_3M$;

xii) $-NO_2$;

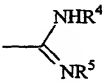
xiii) halogen selected from fluorine, chlorine, bromine, iodine, or mixtures thereof;

xiv) $-C(Hal)_3$, wherein each Hal is fluorine, chlorine, bromine, iodine, or mixtures thereof;

xv) $-COR^{14}$; wherein R^{14} is hydrogen, -OH, C_1-C_{12} alkyl, C_1-C_{12} alkoxy, or mixtures thereof; $-N(R^{15})_2$, or mixtures thereof; each R^{15} is independently hydrogen, -OH, C_1-C_4 alkyl, or mixtures thereof;

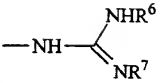
xvi) $-CH(OR^{14})_2$ wherein R^{14} is hydrogen, C_1-C_{12} alkyl, or two R^{14} units can be taken together to form a ring having from 3 to 5 carbon atoms; or mixtures thereof;

xvii) a unit having the formula:



wherein R^4 is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^5 is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^4 and R^5 can be taken together to form a heterocyclic ring comprising from 3 to 5 carbon atoms;

xviii) a unit having the formula:



wherein R^6 is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^7 is hydrogen, C_1-C_4 alkyl, or mixtures thereof; R^6 and R^7 can be taken together to form a heterocyclic ring comprising from 3 to 5 carbon atoms;

xix) $-NHOR^{16}$, wherein R^{16} is hydrogen; C_1-C_{12} linear or branched alkyl; acyl having the formula $-COR^{17}$, wherein R^{17} is C_1-C_4 alkyl; or mixtures thereof;

xx) a unit having the formula:

$$—CH=NOR^{16}$$

wherein R^{16} is hydrogen; C_1-C_{12} linear or branched alkyl; C_7-C_{22} linear or branched alkylenearyl; acyl having the formula $-COR^{17}$, R^{17} is C_1-C_4 alkyl; or mixtures thereof;

xxi) an amino unit having the formula:

$$—(CH_2)_mN(R^3)_2$$

wherein each R^3 is independently C_1-C_{18} substituted or unsubstituted, linear or branched alkyl; m is from 0 to 10;

xxii) a quaternary ammonium unit having the formula:

$$—(CH_2)_m\overset{+}{N}(R^3)_3\ Y^-$$

wherein each R^3 is independently C_1-C_{18} substituted or unsubstituted, linear or branched alkyl; Y is an anion of sufficient charge to provide electronic neutrality; m is from 0 to 10;

o) two R units on the same carbon atom can be taken together to form a carbonyl unit or carbonyl unit equivalent; and

p) mixtures thereof;

X is selected from the group consisting of $-CH_2-$, -NH-, -O-, -S-, $-CF_2-$, and mixtures thereof.

12. A composition according to [any of CLAIM 8 Claims 8-11] wherein [Poly] units are selected from:

i) a unit having the formula:

$$R^{19}(OR^{18})_x—$$

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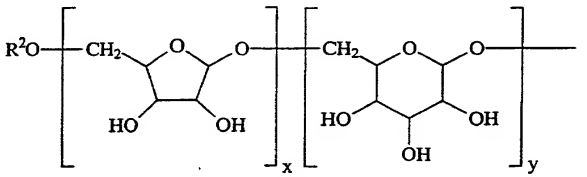
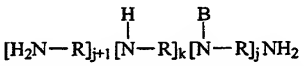
wherein R^{18} is C_2-C_{12} linear alkylene, C_3-C_{12} branched alkylene, phenylene, C_7-C_{12} alkylenearylene, and mixtures thereof; R^{19} is hydrogen, C_1-C_{22} substituted or unsubstituted, linear or branched alkyl; C_3-C_{22} substituted or unsubstituted, linear or branched cycloalkyl; C_2-C_{22} substituted or unsubstituted, linear or branched alkenyl; C_2-C_{22} substituted or unsubstituted, linear or branched alkynyl; C_6-C_{22} substituted or unsubstituted aryl; and mixtures thereof;

ii) a unit having the formula:



wherein R^2 is hydrogen, C_1-C_4 alkyl, and mixtures thereof; x and y are each independently from 0 to 100;

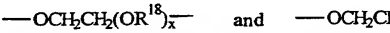
iii) a polyamine unit having the formula:



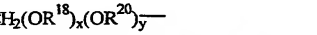
wherein R is C_2-C_{12} linear alkylene, C_3-C_{12} branched alkylene, and mixtures thereof; j and k are such that the molecular weight of said polyamine does not exceed 30,000 daltons; and

iv) mixtures thereof.

13. A composition according to any of Claims 8-12 wherein [Poly] units have the formulae:



and



R^{18} ethylene and R^{20} is 2-propylene and when R^{18}, OR^{19}, and OR^{20} are taken together said [Poly] unit has a molecular weight of from 500 daltons, to 10,000 daltons.